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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P 20156 PC	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/NO 2003/000204	International filing date (day/month/year) 19.06.2003	Priority date (day/month/year) 26.06.2002
International Patent Classification (IPC) or national classification and IPC F16L 55/128		
Applicant Plugging Specialists International AS et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand 07.01.2004	Date of completion of this report 25.08.2004
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Jenny Petersson/EK Telephone No. +46 8 782 25 00

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/NO2003/000204

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-7 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* 5 received by this Authority on 10.05.2004
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages 1-2 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/NO2003/000204

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-6</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-6</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-6</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Documents cited in the International Search Report:

D1: GB 2286868 A
D2: US 6241424 B1

The cited documents represent the general state of the art.
The invention defined in claims 1-6 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed arrangement at a plug for sealing liquid- or gas-carrying pipes. Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-6 is novel and is considered to involve an inventive step. The invention is industrially applicable.

REPLACED BY
ART 34 A/E/T

C l a i m s

1. Arrangement at a plug for sealing liquid- or gas-
carrying pipes, comprising several slips (15) arranged
peripherally on the plug, so as to allow them to be
pushed up along a conical force ring (25) by means of a
hydraulic cylinder (5), c h a r a c t e r i z e d
i n that the slips (15) are provided with a possibly
divided sliding surface (19, 19') and at least one
possibly divided sliding surface (20, 23) having an
angle that differs from the angle of the sliding surface
(19, 19').
2. An arrangement in accordance with Claim 1,
c h a r a c t e r i z e d i n that the conical
force ring (25) is equipped with a possibly divided
sliding surface (29, 29') and at least one possibly
divided sliding surface (27, 31) having an angle that
differs from the angle of the sliding surface (29, 29').
3. An arrangement in accordance with one or more of the
preceding claims, c h a r a c t e r i z e d i n
that the first part of the sliding surfaces (20, 23, 27,
31) has a steep gradient and that the second part of the
sliding surfaces (21, 21', 29, 29') has a small gradient
relative to the longitudinal axis of the plug.
4. An arrangement in accordance with one or more of the
preceding claims, c h a r a c t e r i z e d i n
that the sliding surfaces (20, 21, 21', 23) of the slips
(15) have a shape that in a given position of the slips

(15) corresponds to the sliding surfaces (27, 29, 29', 31) of the conical force ring (25).

5. An arrangement in accordance with one or more of the preceding claims, c h a r a c t e r i z e d i n
5 that the slips (15) comprise a slip front (20) extending in parallel with a slip end (16), as well as sliding surfaces (21, 21') that are divided by a slip recess (22) that extends in parallel with the slip front (20), where the side that faces the same way as the slip front
10 (20) forms a step front (23) with the same direction as the slip front (20).

6. An arrangement in accordance with one or more of the preceding claims, c h a r a c t e r i z e d i n
15 that the surface of the conical force ring (25) comprises a force ring front (27) and a sliding surface (29, 29') that is divided by a force ring recess (30) extending in parallel with the force ring front (27), where the side that faces the same way as the force ring front (27) forms a step front (31) with the same
20 direction as the force ring front (27).